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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/773,341

02/09/2004

Hiroaki Jo

118375

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25944

7590

08/07/2007

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EXAMINER

NGUYEN, JENNIFER T

ART UNIT

PAPER NUMBER

2629

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/773,341	<b>Applicant(s)</b> JO, HIROAKI	
	<b>Examiner</b> Jennifer T. Nguyen	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 May 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6-18-07</u> | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This Office action is responsive to amendment filed on 5/17/07.

#### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asona et al. (Patent No.: US 6,768,482) in view of Sanford et al. (Patent No. US 6,734,636).

Regarding claims 1 and 9, Asona teaches an electro-optical device (fig. 3), comprising:

a plurality of scanning lines ( $X_i, X_{(I+1)}, X_{(I+2)} \dots$ );

a plurality of data lines ( $Y_i, Y_{(I+1)}, Y_{(I+2)} \dots$ );

a plurality of pixels (11) corresponding to intersections of the scanning lines and the data lines, each of the pixels having a storage device ( $C_{ii}$ ) to store data, a driving element ( $TR_{iib}$ ) to set a driving current flowing from a first power supply line (15) to a second power supply line (14), and an electro-optical element ( $EL_{ii}$ ) to emit light with a brightness in accordance with the set driving current;

a scanning line driving circuit (not shown) to select the scanning line corresponding to a pixel in which data is to be written by outputting scanning signals to the scanning lines;

a data line driving circuit (not shown) to output data to the data line corresponding to the pixel in which data is to be written in cooperation with the scanning line driving circuit; and

a power supply line control circuit to perform impulse driving of the electro-optical element (ELii) by setting the electric potential of the second power supply line (Vss) to be alternately and repeatedly applying a forward bias and a reverse bias to the electro-optical element (ELii) during a period of time (i.e., a frame) from the moment in which the scanning line corresponding to the pixel in which the data is to be written is selected, to the moment in which the same scanning line is selected again (col. 4, lines 24-60, col. 5, lines 5-15).

Asano differs from claim 1 and 9 in that he does not specifically teach the second power supply line to be variable applying a reverse bias to the electro-optical element.

Sanford teaches a power supply line control circuit (325) to perform impulse driving of the electro-optical element (320) by setting the electric potential of the second a power supply line to be variable (Vss1 and Vss2) applying a reverse bias to the electro-optical element (col. 6, lines 21-48). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the second power supply line to be variable applying a reverse bias to the electro-optical element as taught by Sanford in the system of Asano in order to avoid black image, therefore a high definition and high brightness display apparatus is obtained.

Regarding claims 2-4 and 10-12, the combination of Asano and Sanford teaches the power supply line control circuit setting the electric potential of the second power supply line ( $V_s = \text{GND}$ ) to be lower than the electric potential of the first power supply line ( $V_d = V_{cc}$ ) when a forward bias is applied to the electro-optical element and setting the electric potential of the second power supply line ( $V_s = V_{cc}$ ) to be no less than the electric potential of the first

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power supply line ( $V_d = \text{GND}$ ) when a reverse bias is applied to the electro-optical element (col. 6, lines 28-48 of Sanford).

Regarding claims 5 and 13, the combination of Asano and Sanford teaches the power supply line control circuit providing a delayed period of time after the selection of a certain scanning line is stopped until the selection of the next scanning line starts, and performing impulse driving of the electro-optical element during each corresponding delayed period of time (col. 7, lines 7-20 of Sanford).

Regarding claims 6 and 14, the combination of Asano and Sanford teaches the power supply line control circuits being provided in units of the scanning lines, and each of the power supply line control circuits performing impulse driving of the electro-optical elements of a row of pixels corresponding to the scanning line in synchronization with the selection of the scanning line corresponding to the corresponding power supply line control circuit (col. 7, lines 22-27 of Sanford).

Regarding claim 7, the combination of Asano and Sanford teaches each of the pixels further comprises: a control element (Q302, fig. 3) provided in the current path of the driving current and the luminescence of the pixel being controlled when data is written by controlling the electrical connection of the corresponding control element (col. 6, lines 27-40 of Sanford).

Regarding claim 8, the combination of Asano and Sanford teaches an electronic apparatus equipped with the electro-optical device (col. 1, lines 24-26 of Sanford).

4. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.


***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer T. Nguyen whose telephone number is 571-272-7696. The examiner can normally be reached on Mon-Fri: 9:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer Nguyen  
8/4/07



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